

IN THE CLAIMS

Please amend the claims as shown below.

1. (Currently Amended) A method of inventorying logical volumes in a computer storage system, the computer storage system comprising a plurality of storage elements coupled together with a communication network, the method comprising steps of:

for each of a plurality of logical volumes, maintaining ~~identifying~~ information ~~for~~ identifying each user of the respective logical volume, wherein the respective logical volume may have multiple users; and

for each of the plurality of logical volumes, verifying that the logical volume is still in use using at least a portion of the ~~identifying~~ information identifying each user.

2. (Original) The method of claim 1, wherein the verifying step comprises a step of performing verification for each of the logical volumes stored in the computer storage system as a discrete, continuous process.

3. (Original) The method of claim 1, wherein the verifying step comprises a step of performing verification for each of the plurality of logical volumes located on one of the storage elements as a discrete, continuous process.

4. (Original) The method of claim 1, wherein the verifying step comprises a step of performing verification for each of the plurality of logical volumes accessed by one of the users, coupled to the communication network, as a discrete, continuous process.

5. (Original) The method of claim 1, wherein at least one of the users is a host computer.

6. (Original) The method of claim 1, wherein at least one of the users is an account on a host computer.

7. (Original) The method of claim 1, wherein at least one of the users is an application running on a host computer.
8. (Original) The method of claim 1, wherein the logical volume is a hyper-volume.
9. (Original) The method of claim 1, wherein the logical volume is a component of a conventional logical volume.
10. (Original) The method of claim 1, wherein the logical volume is a partition.
11. (Original) The method of claim 1, wherein the step of maintaining is performed by a storage management console computer.
12. (Currently Amended) The method of claim 1, wherein the step of maintaining comprises a step of maintaining ~~identifying the~~ information ~~for identifying~~ each user of the respective logical volume on the respective storage element on which the logical volume is stored.
13. (Currently Amended) The method of claim 1, wherein the step of maintaining comprises a step of maintaining ~~identifying the~~ information ~~for identifying~~ each user of the respective logical volume on a storage management console computer.
14. (Previously Presented) The method of claim 1, further comprising a step of assigning an enterprise logical volume identifier (ELVID) to each logical volume.
15. (Original) The method of claim 1, wherein the verifying step comprises steps of:
identifying at least one of a plurality of host computers, the identified host computers having accessed one of the logical volumes; and

querying each of the identified of host computers about whether the logical volume is still in use.

16. (Currently Amended) A storage element, comprising:
a storage medium to store logical volumes;
an access manager module configured to maintain identifying information for each user of the logical volumes stored on the storage medium, wherein the access manager module is configured to maintain ~~identifying~~ information for identifying multiple users for each of the logical volumes; and
a verifier module, coupled to the access manager module, that uses at least a portion of the ~~identifying~~ information identifying multiple users to perform verification that a logical volume is still in use.

17. (Original) The storage element of claim 16, further comprising:
a verification initiator to initiate verification.

18. (Original) The storage element of claim 17, wherein the verifier module includes a time tracker to identify when a logical volume has not been accessed for an identified period of time.

19. (Original) The storage element of claim 17, wherein the verifier module includes a module to query each user of a logical volume to be verified.

20. (Previously Presented) The storage element of claim 16, further comprising:
an enterprise logical volume identifier (ELVID) database module.

21. (Previously Presented) The storage element of claim 16, further comprising:
an enterprise logical volume identifier (ELVID) verification module.

22. (Currently Amended) A storage management facility for a computer system that includes a plurality of storage elements and a plurality of host computers, comprising:

an access manager module configured to maintain identifying information for each user of the logical volumes stored on the storage medium, wherein the access manager module is configured to maintain ~~identifying~~ information for identifying multiple users for each of the logical volumes; and

a verifier module, coupled to the access manager module, that uses at least a portion of the ~~identifying~~ information identifying multiple users to perform verification that a logical volume is still in use.

23. (Previously Presented) The storage management facility of claim 22, further comprising:

a verification initiator to initiate verification.

24. (Previously Presented) The storage management facility of claim 23, wherein the verifier includes a time tracker to identify when a logical volume has not been accessed for an identified period of time.

25. (Previously Presented) The storage management facility of claim 23, wherein the verifier includes a module to query each user of a logical volume to be verified.

26. (Previously Presented) The storage management facility of claim 22, further comprising:

an enterprise logical volume identifier (ELVID) database manager module.

27. (Previously Presented) The storage management facility of claim 22, further comprising:

an enterprise logical volume identifier (ELVID) verification module.

28. (Withdrawn) A method of detecting when one of a plurality of logical volumes, each logical volume being stored on one of a plurality of storage elements in a computer storage system, no longer needs to be stored on its respective storage element, the method comprising steps of:

tracking accesses to the logical volumes;

automatically identifying one of the logical volumes that has not been accessed for a predetermined period; and

determining whether the identified logical volume still requires storage on its respective storage element.

29. (Withdrawn) The method of claim 28, wherein the determining step comprises a step of querying users which have accessed the identified logical volume.

30. (Withdrawn) The method of claim 28, further comprising a step of moving the identified logical volume to a secondary storage element.

31. (Withdrawn) The method of claim 28, wherein the step of tracking is performed by a storage management console for the plurality of storage elements.

32. (Withdrawn) The method of claim 28, wherein the step of tracking is performed by the storage elements.

33. (Withdrawn) The method of claim 32, wherein the step of determining is performed by a storage management console for the plurality of storage elements.

34. (Withdrawn) The method of claim 28, wherein the tracking step comprises a step of tracking accesses identified using an ELVID.

35. (Withdrawn) The method of claim 28, further comprising a step of maintaining a database of logical volumes and users that may access the corresponding logical volumes.

36. (Withdrawn) The method of claim 35, wherein the step of maintaining comprises a step of specifying logical volumes using ELVIDs.

37. (New) The method of claim 1, wherein the respective logical volume may have multiple users simultaneously.

38. (New) The storage element of claim 16, wherein at least some of the multiple users may simultaneously access the logical volume.

39. (New) The storage management facility of claim 22, wherein at least some of the multiple users may simultaneously access the logical volume.